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ANSI Z21.88-2017 • CSA 2.33-2017

Vented gas fireplace heaters

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Contents

Interprovincial Gas Advisory Council	4
Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories	6
CSA Technical Committee on Gas Appliances and Related Accessories	9
Z21/CSA Joint Technical Subcommittee on Vented Gas-Fired Warm Air Heaters	12
Preface	16
1 Scope	19
2 Reference publications	20
3 Definitions	24
4 Construction	35
4.1 General construction and assembly	35
4.2 Accessibility	39
4.3 Thickness of materials	39
4.4 Evaluation of combustion/venting side sealing material	42
4.5 Glass fronts	43
4.6 Combustion air and ventilation	44
4.7 Main burners	44
4.8 Primary air adjustment means	46
4.9 Orifice spuds and orifice fittings	47
4.10 Automatic gas ignition systems	47
4.11 Flame spreaders	50
4.12 Appliance main gas valves	50
4.13 Gas supply lines	51
4.14 Bleeds and vents	51
4.15 Thermostats	55
4.16 Automatic valves	55
4.17 Gas appliance pressure regulators	56
4.18 Adjustment of minimum input rating	57
4.19 Pilot gas filters	57
4.20 Fan and limit controls	58
4.21 Joints in heating surfaces	58
4.22 Appliance openings	60
4.23 Direct vent-air intake pipes	60
4.24 Venting (other than direct vent types)	61
4.25 Flue collars and flue outlets (other than direct vent types)	62
4.26 Draft hoods	63
4.27 Automatic vent damper devices	64
4.28 Manually operated vent dampers	64
4.29 Electrical equipment and wiring	65

4.30	Motors and blowers	65
4.31	Cooling section of vented gas fireplace heaters with cooling units	65
4.32	Heating elements located downstream from refrigeration coils	65
4.33	Instructions	66
4.34	Markings	78
5	Performance	89
5.1	General	89
5.2	Test gases	91
5.3	Test pressure and burner adjustments	92
5.4	Category determination	94
5.5	Combustion	98
5.6	Appliance and burner durability test	99
5.7	Burner operating characteristics	99
5.8	Loose burner materials	101
5.9	Pilot operating characteristics	102
5.10	Pilot burners and safety shut-off devices	103
5.11	Direct ignition systems	108
5.12	Proved igniter systems	110
5.13	Combustion chamber relief for gravity vented gas fireplace heaters	113
5.14	Delayed ignition and integrity tests for direct vent gas fireplace heaters	114
5.15	Glass fronts	118
5.16	Burn hazard potential	124
5.17	Main burner and flame spreader temperatures	128
5.18	Non-load-bearing flue gas baffle temperatures	130
5.19	Appliance main gas valves	131
5.20	Gas appliance pressure regulators	132
5.21	Automatic valves	132
5.22	Safety circuit analysis	132
5.23	Manifold and control assembly capacity	132
5.24	Temperature at discharge air openings	133
5.25	Wall, floor, and ceiling temperatures	136
5.26	Flue gas temperatures	144
5.27	Surface temperatures	145
5.28	Evaluation of clothing ignition potential	150
5.29	Venting	151
5.30	Draft hoods	152
5.31	Draft tests for appliances not equipped with draft hoods	155
5.32	Vent safety shut-off systems	155
5.33	Wind test (side wall termination)	157
5.34	Wind test (vertical termination)	159
5.35	Vent and vent-air intake terminal assemblies	162
5.36	Joints in direct vent systems	175
5.37	Allowable vent pipe, heating element, and load-bearing flue gas baffle temperatures	177
5.38	Automatic vent damper devices	179
5.39	Cooling section of appliances with cooling units	179
5.40	Heating elements located downstream from refrigeration coils	179
5.41	Marking material adhesion and legibility	179

6 Vented condensing gas fireplace heaters (construction) 180

- 6.1 Scope 180
- 6.2 General construction and assembly 180
- 6.3 Vent-air intake pipes 181
- 6.4 Condensate disposal 181
- 6.5 Condensate pumps 182

7 Vented condensing gas fireplace heaters (performance) 182

- 7.1 General 182
- 7.2 Venting systems for Category II or IV appliances 182
- 7.3 Corrosion resistance 183
- 7.4 Condensate disposal systems 183
- 7.5 Condensate drain system located in blower compartment 184

8 Production and manufacturing tests 185**9 Items unique to the United States 186**

- 9.1 Electrical equipment and wiring 186
- 9.2 Electrical diagrams 196
- 9.3 Motors and blowers 197

10 Items unique to Canada 198

-
- Annex A (normative) — Automatic intermittent pilot ignition systems for field installation 219
 - Annex B (normative) — Provisions for listed gas appliance conversion kits (optional) 224
 - Annex C (normative) — Outline of lighting instructions for appliances equipped with continuous pilots 227
 - Annex D (normative) — Outline of operating instructions for appliances equipped with intermittent pilot or interrupted pilot systems 230
 - Annex E (normative) — Outline of operating instructions for appliances equipped with direct ignition systems 233
 - Annex F (normative) — Delayed ignition test using a stoichiometric gas-air mixture for natural gas direct vent fireplaces 236
 - Annex G (normative) — Sample failure modes and effects analysis for component miswiring* 239
 - Annex H (normative) — Gross temperature calculation 240
 - Annex I (normative) — General inspection list for determining safe operation of a direct vent gas fireplace 244
 - Annex J (normative) — Corrosion resistance criteria and test method for condensing appliances 245
 - Annex K (normative) — Recommended wire color usage 257
 - Annex L (informative) — Pertinent references to ANSI Y14.15 258
 - Annex M (informative) — Wire color designations 259
 - Annex N (informative) — Preferred graphic symbols of commonly used items, extracted from the Standard ANSI/IEEE 315, *Graphic Symbols for Electrical and Electronics Diagrams*, and abbreviations for these items 260
 - Annex O (informative) — Table of conversion factors 262

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Preface

This is the eighth edition of ANSI Z21.88 • CSA 2.33, *Vented gas fireplace heaters*. It supersedes the previous editions published in 2016, 2014, 2009, 2005, 2002, 2000, and 1998.

This Standard was prepared by the Z21/CSA Joint Technical Subcommittee on Standards for Vented Gas-Fired Warm Air Heaters, under the jurisdiction of the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories, the Canadian Technical Committee on Gas Appliances and Related Accessories, and the Strategic Steering Committee on Standards for Fuel Burning Equipment, and had been formally approved by the Technical Committees, American National Standards Institute, and the Interprovincial Gas Advisory Council.

Interpretations: The Strategic Steering Committee on Standards for Fuel Burning Equipment has provided the following direction for the interpretation of standards under its jurisdiction: “The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant committee interpretation has not already been published, CSA Group’s procedures for interpretation shall be followed to determine the intended safety principle.”

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *This Standard contains SI (Metric) units corresponding to the yard/pound quantities, the purpose being to allow the standard to be used in SI (Metric) units. (IEEE/ASTM SI 10, American National Standard for Metric Practice, or ISO 80000-1:2009, Quantities and units – Part 1: General, is used as a guide in making metric conversion from yard/pound quantities.) If a value for a measurement and a corresponding value in other units are stated, the first stated value is to be regarded as the requirement. The given corresponding value may be approximate. If a value for a measurement and a corresponding value in other units are both specified as a quoted marking requirement, the first stated unit, or both, are to be provided.*
- 3) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
- 4) *This publication was developed by consensus, which is defined by CSA Policy governing standardization – Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity.” It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.*
- 5) *This Standard is subject to review at least every five years; suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include “Proposal for change” in the subject line:*
 - a) *Standard designation (number);*
 - b) *relevant clause, table, and/or figure number;*
 - c) *wording of the proposed change; and*
 - d) *rationale for the change.*
- 6) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:*
 - a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
 - b) *provide an explanation of circumstances surrounding the actual field condition; and*
 - c) *where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.*
- 7) *Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.*

History of the development of the Standard for Vented gas fireplace heaters

Note: *This history is informative and is not part of the standard.*

With the onset of the Free Trade Agreement between the United States and Canada on January 2, 1988, significant attention was given to the harmonization of the United States and Canadian safety standards addressing gas-fired equipment for residential, commercial and industrial applications. It was believed that the elimination of the differences between the standards would remove potential trade barriers and provide an atmosphere in which North American manufacturers could market more freely in the United States and Canada. The harmonization of these standards was also seen as a step toward harmonization with international standards. Joint subcommittees were established to facilitate the standards harmonization process between the United States and Canada.

At its October 19-20, 1995 meeting, the Z21/CGA Joint Subcommittee on Standards for Vented Gas-Fired Warm Air Heaters formed a working group to prepare a draft bi-national standard for Vented Gas Fireplace Heaters. During its October 22-23, 1996 meeting the joint subcommittee approval to send the draft standard for public review and comment.

The first draft harmonized standard was based on current coverage from the *American National Standard/Canadian Gas Association Standard for Vented Gas Fireplace*, ANSI Z21.50-1996 • CGA 2.22-M96, and the *American National Standard/CSA Standard for Vented Gas-Fired Space Heating Equipment*, ANSI Z21.86-1998 • CSA 2.32-M98.

Following reconsideration and modification of the proposed draft standard, in light of comments received, the joint vented heater subcommittee at its March 10-11, 1997 meeting, recommended the proposed draft standard to Accredited Standards Committee Z21/83 and the (Interim CSA) Standards Steering Committee for approval.

The proposed draft of the harmonized standard for vented gas-fireplace heaters, as modified by the joint subcommittee, was approved by the Z21/83 Committee by letter ballot dated August 19, 1997, and by the CGA Standards Steering Committee by letter ballot dated January 5, 1998.

The first edition of the *American National Standard/CSA Standard for Vented Gas Fireplace Heaters* was approved by the Canadian Interprovincial Gas Advisory Council on February 26, 1998, and by the American National Standards Institute, Inc., on March 31, 1998.

The second edition of the *American National Standard/CSA Standard for Vented Gas Fireplace Heaters* was approved by the Canadian Interprovincial Gas Advisory Council on June 1, 2000, and by the American National Standards Institute, Inc., on October 20, 1999.

The third edition of the harmonized *American National Standard/CSA Standard for Vented Gas Fireplace Heaters* was approved by the Canadian Interprovincial Gas Advisory Council on March 18, 2002 and by the American National Standards Institute, Inc., on April 11, 2002.

The fourth edition of the harmonized *American National Standard/CSA Standard for Vented Gas Fireplace Heaters* was approved by the Canadian Interprovincial Gas Advisory Council on December 2, 2005 and by the American National Standards Institute, Inc., on October 19, 2005.

Following the procedures outlined above further revisions to this Standard were made in line with industry developments.

The fifth edition of the harmonized *American National Standard/CSA Standard for Vented Gas Fireplace Heaters* was approved by the Interprovincial Gas Advisory Council on December 29, 2009 and by the American National Standards Institute, Inc., on March 26, 2009.

The sixth edition of the *Standard for Vented gas fireplace heaters* was approved by the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories on December 20, 2013; the CSA Technical Committee on Gas Appliances and Related Accessories on October 30, 2013; the IGAC on February 18, 2014; and ANSI on February 20, 2014.

The seventh edition of the *Standard for Vented gas fireplace heaters* was distributed for industry review and comment dated July 2013, July 2014, and December 2014; and subsequently approved by the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories on August 29, 2016; the CSA Technical Committee on Gas Appliances and Related Accessories on October 25, 2016; the IGAC on September 15, 2016; and ANSI on November 2, 2016.

This, the eighth edition of the *Standard for Vented gas fireplace heaters* was distributed for industry review and comment dated March 2012, September 2012, July 2013, November 2013, July 2014, December 2014, September 2015, and March 2016; and subsequently approved by the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories on August 28, 2017; the CSA Technical Committee on Gas Appliances and Related Accessories on April 25, 2017; the IGAC on August 28, 2017; and ANSI on December 6, 2017.

The previous editions of the vented gas fireplace heaters standard, and addenda thereto, approved by the Interprovincial Gas Advisory Council and American National Standards Institute, Inc. are as follows:

ANSI Z21.88-1998 • CSA 2.33-M98	ANSI Z21.88a-1998 • CSA 2.33a-M98 ANSI Z21.88b-1999 • CSA 2.33b-M99
ANSI Z21.88-2000 • CSA 2.33-2000	ANSI Z21.88a-2000 • CSA 2.33a-2000 ANSI Z21.88b-2001 • CSA 2.33b-2001
ANSI Z21.88-2002 • CSA 2.33-2002	ANSI Z21.88a-2003 • CSA 2.33a-2003 ANSI Z21.88b-2003 • CSA 2.33b-2003
ANSI Z21.88-2005 • CSA 2.33-2005	ANSI Z21.88a-2007 • CSA 2.33a-2007 ANSI Z21.88b-2008 • CSA 2.33b-2008
ANSI Z21.88-2009 • CSA 2.33-2009	ANSI Z21.88a-2012 • CSA 2.33a-2012
ANSI Z21.88-2014 • CSA 2.33-2014	
ANSI Z21.88-2016 • CSA 2.33-2016	

The following identifies the designation and year of the eighth edition of the standard:

ANSI Z21.88-2017 • CSA 2.33-2017

Note: *This edition of ANSI Z21.88 • CSA 2.33 incorporates changes to the 2016 edition and addenda thereto. Changes, other than editorial, are denoted by a delta symbol in the margin.*

ANSI Z21.88-2017 • CSA 2.33-2017

Vented gas fireplace heaters

1 Scope

1.1

This Standard applies to newly produced vented gas fireplace heaters (see Clause 3, Definitions), hereinafter referred to as appliance(s), constructed entirely of new, unused parts and materials, and having input ratings up to and including 400,000 Btu/hr (117 228 W):

- a) for use with natural gas;
- b) for use with propane;
- c) direct vent appliances for manufactured home (USA only) or mobile home OEM installation convertible for use with natural gas and propane when provision is made for simple conversion from one gas to the other [see Clause 4.1.4a) and b)];
- d) direct vent appliances for manufactured home (USA only) or mobile home aftermarket installation for use with natural gas only or propane gas only [see Clause 4.1.4b)];
- e) direct vent appliances for recreational vehicle installation for use with propane gas only [see Clause 4.1.4c)];
- f) direct vent appliances for recreational vehicle installation only convertible for use with natural gas and propane gas when provision is made for the simple conversion from one gas to the other [see Clause 4.1.4c)]; and
- g) for direct vent appliances for manufactured home (USA only) or mobile home OEM installation for use with propane gas only [see Clause 4.1.4a)].

The construction of vented gas fireplace heaters and vented gas fireplace heaters with cooling units for use with the above-mentioned gases is covered under Clause 4, Construction.

The performance of vented gas fireplace heaters and vented gas fireplace heaters with cooling units for use with the above-mentioned gases is covered under Clause 5, Performance.

Δ 1.2

Clauses 4 and 5 cover all vented gas fireplace heaters. In addition, Clauses 6 and 7 address the requirements specific to vented condensing gas fireplace heaters.

1.3

Annex A, Automatic intermittent pilot ignition systems for field installation, includes provisions for newly produced (optional) automatic intermittent pilot ignition systems (see Clause 3, Definitions), constructed entirely of new, unused parts and materials, to be adapted in the field to an appliance equipped with an existing continuous pilot burner and which has been examined and tested for compliance with this Standard when installed on the appliance.

1.4

If a value for measurement given in this standard is followed by an equivalent value in other units, the first stated value is to be regarded as the specification.

1.5

All references to “psi” throughout this Standard are to be considered gauge pressures, unless otherwise specified.

1.6

Clause 9, Items unique to the United States, contains provisions that are unique to the United States.

1.7

Clause 10, Items unique to Canada, contains provisions that are unique to Canada.

1.8

This Standard also applies to appliances with draft hoods that are factory-equipped with automatic vent damper devices (see Clause 3, Definitions), hereinafter referred to as vent damper devices.

1.9

Special construction provisions applicable to vented gas fireplace heaters designed for use with an optional design-certified conversion kit are outlined under Annex B, Provisions for listed gas appliance conversion kits (optional).

1.10

Clause 2, Reference publications, contains a list of standards specifically referenced in this Standard and sources from which they may be obtained.

1.11

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user shall satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

CSA Group

ANSI Z21.12-1990 (R2000) and Addenda ANSI Z21.12a-1993 (R2000), ANSI Z21.12b-1994 (R2000)
Draft Hoods